

IN THE CLAIMS:

1. (Currently Amended): A heater control apparatus for a vehicle provided with a heater core case, a temperature control lever, a temperature control lever angle sensor, an interior temperature sensor, wherein said vehicle heater control apparatus comprises:

a cooling water bypass extending between a cooling water inlet conduit and a cooling water outlet conduit in the heater core case, the cooling water inlet conduit being in fluid communication with the cooling water outlet conduit through the cooling water bypass;

an engine control part for outputting a control signal in order to control an opening mode of the conduits comparing a signal generated from the temperature control lever angle sensor and a signal generated from the interior temperature sensing sensor with reference to corresponding set-point values;

wherein the engine control part outputs a control signal corresponding to a normal state of the conduits when the control signal generated from the temperature control lever angle sensor is higher than 0°C, and simultaneously the control signal generated from the interior temperature sensing sensor is above 20°C;

and wherein the engine control part outputs a control signal corresponding to the opening mode of the cooling water bypass when the control signal generated from the temperature control lever angle sensor is below 0°C, and simultaneously the control signal generated from the interior temperature sensing sensor is below 20°C in order to bypass the cooling water without passing through the heater core;

a relay controlled in accordance with ~~a~~ the control signal generated from the engine control part; and

a cooling water conduit control part for allowing the cooling water to be bypassed via the cooling water bypass in accordance with the control signal generated from the engine control part after the relay is turned on, the cooling water conduit control part being installed in the cooling water bypass.

2. (Canceled).

3. (Currently Amended): The vehicle heater control apparatus according to claim 1, wherein the cooling water conduit control part comprises:

a support bearing for supporting the cooling water bypass upwards and downwards; a cylindrical guide bar being inserted into the support bearing; a solenoid coil for forming a magnetic field in accordance with a signal generated from the relay, the solenoid coil being wound around an outer surface of the guide bar; first and second ~~conduit magnetic controllers~~ magnetic conduit controllers being moveable from initial positions with respect to the conduits in accordance with the magnetic field created by the solenoid coil; a stopper for supporting the first and second conduit magnetic controllers being installed at a center of the guide bar; first and second magnetic controller springs for returning the first and second conduit magnetic controllers to their initial positions; first and second conduit guide pins for bypassing the cooling water while pushed from initial positions by the first and second conduit magnetic controllers; and first and second conduit guide pin springs for returning first and second conduit guide pins to their initial positions during the returning of the first and second magnetic controller springs.

4. (Currently Amended): The vehicle heater control apparatus according to ~~claim 1~~ claim 3, wherein a rolling wheel is installed at ends of the first and second magnetic conduit controllers, respectively.

5. (Currently Amended): The vehicle heater control apparatus according to ~~claim 1~~ claim 3, wherein an end of the first and second magnetic controller springs is respectively fixed to the first and second magnetic conduit controllers while another end of the first and second magnetic controller springs is fixed to a stopper.

6. (Currently Amended): The vehicle heater control apparatus according to ~~claim 1~~ claim 3, wherein ends of the first and second conduit guide pin springs are fixed to the first and second conduit guide pins while another end of the first and second conduit guide pin springs are fixed to an upper side of the cooling water bypass.

7. (Original): The vehicle heater control apparatus according to claim 1, wherein said vehicle heater control apparatus further comprises a switch for removing an electric current which remains at the solenoid coil after cutting-off the signal generated from the relay.

8. (Original): A method for controlling a vehicle heater control apparatus comprising a cooling water bypass extending between a cooling water inlet conduit and a cooling water outlet conduit in the heater core case, an engine control part for outputting a control signal based on comparing a signal generated from the temperature control lever angle sensor and a signal generated from the interior temperature sensing sensor with corresponding set-point values, a relay being turned on in accordance with a control signal generated from the engine control part, and a cooling water conduit control part for allowing the cooling water to be bypassed via the cooling water bypass in accordance with the control signal generated from the engine control, the method comprising:

determining whether an interior temperature sensed by the temperature sensor is higher than a first preset standard temperature or not after receiving a control signal, which corresponds to an air conditioning mode, from the temperature control lever angle sensor;

determining whether the interior temperature is higher than a second preset standard temperature or not, in a state that the interior temperature is higher than the first preset standard temperature;

controlling an opening mode of the conduits by turning on the relay and by completely closing the cooling water inlet conduit and the cooling water outlet conduit and by fully opening the cooling water bypass, in a state that the interior temperature is higher than the second preset standard temperature; and

controlling an opening mode of the cooling water bypass by turning on the relay and by opening the cooling water bypass in accordance with the increase of the interior temperature, in a state that the interior temperature is higher than the first preset standard temperature and also is lower than the second preset standard temperature.

9. (Original): The method for controlling a vehicle heater control apparatus according to claim 8, wherein in the step of controlling an opening mode of the cooling water bypass, opening positions of the first and second conduit guide pins are controlled by changing the voltage of an electric source flowing along the solenoid coil of the cooling water conduit control part via the relay.

10. (Original): The method for controlling a vehicle heater control apparatus according to claim 8, wherein the first preset standard temperature is about -5°C and the second preset standard temperature is about 20°C.